

I CLAIM

1. A tubing expander comprising:

a body adapted for rotation within tubing to be expanded;

5 at least one radially movable expansion member mounted on the body; and

a sleeve mounted about the body and being radially supported by the expansion member, the sleeve being adapted to be offset from the body when the expansion member is actuated to provide a rolling contact with an inner surface of tubing to be expanded as the body is rotated within the tubing.

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2. The expander of claim 1, in combination with a section of expandable tubing.

15 3. The expander of claim 1, in combination with a section of expandable tubing which defines a plurality of openings before or following expansion.

4. The expander of claim 2, wherein the body defines a leading end dimensioned to be a snug fit in the tubing section.

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5. The expander of claim 1, wherein the expander

comprises a plurality of radially movable expansion members and associated sleeves.

6. The expander of claim 5, wherein four sets of expansion members and sleeves are provided.

5 7. The expander of claim 5, wherein adjacent expansion members are circumferentially offset.

8. The expander of claim 7, wherein a first set of two adjacent expansion members are mutually offset by 180°, and a second set of two expansion members are mutually offset
10 by 180°, and the first and second sets of expansion members are offset by 90°.

9. The expander of claim 5, wherein at least one of the sleeves has a tapered leading end.

10. The expander of claim 5, comprising a leading sleeve
15 having a tapered leading end.

11. The expander of claim 5, comprising a leading sleeve which is longer than the other sleeves.

12. The expander of claim 5, wherein the sleeves increase in diameter from the leading end of the expander.

20 13. The expander of claim 1, wherein the expansion member

is fluid actuated.

14. The expander of claim 1, wherein the expansion member comprises a piston mounted in a corresponding recess in the expander body.

5 15. The expander of claim 14, wherein the recess communicates with an axial fluid passage in the body.

16. The expander of claim 14, wherein the recess is substantially cylindrical.

10 17. The expander of claim 1, wherein the expansion member comprises a roller for engaging an inner face of the sleeve.

18. The expander of claim 17, wherein the roller is mounted on an axle extending axially of the expander body.

15 19. The expander of claim 1, wherein the sleeve has an axis adapted to remain parallel to the axis of a tubing section as the sleeve rotates therein.

20 20. The expander of claim 1, wherein the sleeve has an axis adapted to be skewed relative to the axis of a tubing section as the sleeve rotates therein, whereby rotation of the sleeve, in contact with a tubing section, induces an axial force on the expander.

21. The expander of claim 1, wherein the outer surface of the sleeve defines a contact surface adapted to facilitate creation and transfer of axial force between the sleeve and a tubing section as the sleeve rotates therein.

5 22. A method of expanding tubing comprising the steps:
providing a tubing expander comprising a body carrying
at least one radially movable expansion member and a sleeve
mounted about the body and being radially supported by the
expansion member;

10 locating the expander in a tubing section of a first
diameter;

radially extending the expansion member to urge a
portion of the sleeve into contact with an internal surface
of the tubing section; and

15 rotating the expander such that the sleeve is rolled
around the internal surface of the tubing section and
expands the tubing section to a larger second diameter.

23. The method of claim 22, comprising expanding the
tubing section downhole.

20 24. The method of claim 22, wherein the tubing section is
slotted expandable tubing and expansion of the tubing
enlarges the slots.

25. The method of claim 22, comprising stabilising the
tubing section on the expander by locating a leading end of